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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/626,565

07/25/2003

Kei Hiruma

116695

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25944

7590

12/14/2004

OLIFF & BERRIDGE, PLC

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EXAMINER

NGUYEN, HOAN C

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 10/626,565	Applicant(s) HIRUMA ET AL.	
	Examiner HOAN C. NGUYEN	Art Unit 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/25/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Specification

The disclosure is objected to because of the following informalities: nowhere in the specification discloses feature: "the liquid crystal used for cleaning on the first substrate" as cited in claim 3.

Appropriate correction is required.

Claim Objections

Claim 7 is objected to because of the following informalities: How does an oriented film constitute a liquid crystal device or protection film? How can liquid material (not liquid crystal) form the oriented film?

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 8-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Abe (US5511591A).

In regard to claim 8, Abe teaches (Fig. 10) a droplet discharge apparatus 10 which discharges a liquid material from a discharge device and arranges the liquid

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material in a specified quantity on a substrate (col. 2 lines 35-38), wherein the discharge device has a nozzle for discharging the liquid material in droplets, and the droplet discharge apparatus comprising:

- a liquid material supply system which supplies the liquid material to the nozzle;
- a measuring device which measures a quantity of the liquid material arranged on the substrate (col. 2 lines 35-38);

Claim 9:

- a temperature control device which warms the liquid material to room temperature or higher (col. 5 line 62 to col. 6 line 2).

Claims 10-11:

- this droplet discharge apparatus 10 can manufacture the liquid crystal display (electronic apparatus) comprising a liquid crystal layer

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe (US5511591A) in view of Mondin et al. (EP 994180 A1)

In regard to claims 1, 3 and 6, Abe teaches (Figs. 7-10) a droplet discharge method for discharging a liquid material from a discharge device and arranging the

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liquid material in a specified quantity on a substrate (col. 2 lines 35-38), the discharge device comprising a nozzle 10 for discharging the liquid material in droplets, and the droplet discharge method comprising the steps of:

- cleaning the nozzle by substitution of capillary 63 (col. 6 lines 29-30);
- arranging at least a part of the liquid material.

wherein

Claim 2:

- the liquid material is warmed to room temperature or higher (col. 5 line 62 to col. 6 line 2).

Claim 4:

- a sealing material for adhering the first substrate to a second substrate is arranged on the first substrate, and a specified quantity of liquid crystal is arranged on the first substrate, away from the sealing material (Figs. 8-10).

Claim 5:

- after the first substrate and the second substrate are adhered to each other via said sealing material, the liquid crystal is spread over a whole space between the first substrate and the second substrate (Figs. 8-10, col. 8 lines 43-46).

However, Abe fails to disclose the cleaning nozzle and substrate with liquid crystal.

Mondin et al. teach the liquid crystal material being used to clean for the removing oily and greasy soil (liquid crystal composition has an evidenced grease

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release effect, contains an anionic detergent, an ethoxylated glycerol type compound, a hydrocarbon ingredient, and water).

It is conventional art that the liquid crystal device comprising the oriented film formed by liquid crystal material. Therefore, the oriented film can be formed by a same method according to claim 7.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as Abe disclosed with the liquid crystal material being used to clean for the removing oily and greasy soil as taught by Mondin et al. (abstract).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Nakamura et al. (US 5865220 A) disclose a liquid crystal material filling apparatus which includes, in a vacuum chamber, a liquid crystal pot having a liquid crystal reservoir for storing a liquid crystal material.

Fujiwara (US 5477349 A) discloses a liquid crystal injecting method, wherein the area of a portion of a liquid crystal cell, which is dipped in a liquid crystal contained in a liquid crystal vessel, is reduced to a minimum, thereby preventing the liquid crystal in the vessel from being contaminated with foreign matter and reducing the amount of the liquid crystal which unnecessarily adheres to the outer surface of the cell.

Yianakopoulos et al. (US 5707957 A) disclose liquid crystal composition comprising a water insoluble organic compound, an ethoxylated nonionic surfactant, an alkyl polyglucoside surfactant, an ethoxylated alkyl ether sulfate surfactant, a cosurfactant and water.

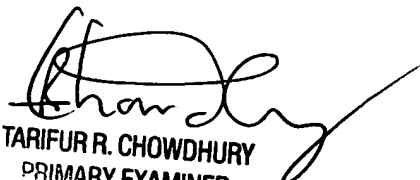
Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim H Robert can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

HOAN C. NGUYEN
Examiner
Art Unit 2871

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TARIFUR R. CHOWDHURY
PRIMARY EXAMINER